

CLAIMS

What is claimed is:

1. An electrophotographic printer comprising:
a main frame;
a photosensitive drum unit vertically detachably installed on the main frame, and having a photosensitive drum on which an electrostatic latent image is formed; and
an intermediate transfer unit vertically detachably installed on the main frame, and having a transfer belt to which a toner image is transferred from the photosensitive drum, wherein the intermediate transfer unit is installed above the photosensitive drum unit.
2. The electrophotographic printer of claim 1, wherein the photosensitive drum unit further comprises a first cleaning device to remove toner remaining on a surface of the photosensitive drum after the toner image is transferred to the transfer belt.
3. The electrophotographic printer of claim 1, wherein the photosensitive drum unit further comprises a charger to charge the photosensitive drum to a uniform potential.
4. The electrophotographic printer of claim 3, further comprising:
an erasing lamp installed on the main frame to irradiate light onto the photosensitive drum and to erase charges remaining on the photosensitive drum after the toner image is transferred,
wherein the photosensitive drum unit further comprises a light guiding member to guide the light irradiated from the erasing lamp to the photosensitive drum.
5. The electrophotographic printer of claim 1, wherein the intermediate transfer unit further comprises a second cleaning device to remove toner remaining on the transfer belt before the toner image is transferred to the sheet.
6. The electrophotographic printer of claim 1, further comprising:
a plurality of development units each having a developing roller to form the toner image by supplying toner to the electrostatic latent image,
wherein the plurality of development units slide in a horizontal direction and are detachably installed on the main frame.

7. The electrophotographic printer of claim 6, wherein each of the plurality of development units further comprises a position determining unit to maintain a developing gap between the developing roller and the photosensitive drum.

8. The electrophotographic printer of claim 7, wherein the position determining unit comprises a bushing rotatably installed at both ends of the developing roller to contact the photosensitive drum when the developing roller is spaced apart from the photosensitive drum by the developing gap.

9. The electrophotographic printer of claim 6, further comprising:
a plurality of rails provided on the main frame; and
an erroneous insertion preventing unit to mount the plurality of development units on a predetermined rail among the plurality of rails.

10. The electrophotographic printer of claim 7, wherein the erroneous insertion preventing unit comprises:
recognition units provided at the respective development units to have different shapes from one another; and
connection units provided at the main frame to be complementarily coupled to corresponding ones of the recognition units.

11. The electrophotographic printer of claim 6, further comprising:
a pre-transfer eraser installed on the main frame to remove charges from a non-image region of the photosensitive drum by irradiating light onto the photosensitive drum before the toner image formed on the photosensitive drum is transferred to the transfer belt,
wherein the pre-erasing unit comprises,
a plurality of pre-erasing lamps to irradiate light; and
a pre-transfer erasing lens to induce the light generated from the pre-transfer erasing lamp to the photosensitive drum, the pre-transfer erasing lens movably installed such that it moves to an erasure position at which the pre-transfer erasing lens is close to the photosensitive drum to provide erasure, and to a retracted position spaced apart from the photosensitive drum so as not to interfere therewith when the photosensitive drum unit is mounted or dismounted.

12. The electrophotographic printer of claim 11, wherein the pre-transfer erasing unit is positioned above the plurality of development units, the pre-transfer erasing lens interfering with the uppermost development unit when the plurality of development units are mounted or dismounted by moving to the erasure position and the retracted position.

13. The electrophotographic printer of claim 12, wherein the pre-transfer erasing unit further comprises an elastic member to provide elasticity in a direction in which the pre-transfer erasing lens moves to the retracted position, the pre-transfer erasing lens contacting a leading edge of the uppermost development unit when the development unit is mounted, to move to the erasure position, and the pre-transfer erasing lens returning to the retracted position by the elasticity of the elastic member when the uppermost development unit is retracted.

14. The electrophotographic printer of claim 1, further comprising:
a transfer roller to selectively contact or be spaced apart from the transfer belt and to transfer the toner image to a sheet of paper transported between the transfer roller and the transfer belt;
a fusing device to fix the toner image on the sheet by applying heat and pressure;
a sheet supplying unit; and
a sheet transport unit including a feed path to guide the sheet between the feed roller and the fusing device, and a duplex path to provide duplex printing.

15. The electrophotographic printer of claim 14, wherein the sheet transport unit is positioned opposite to the plurality of development units with respect to the photosensitive drum unit.

16. The electrophotographic printer of claim 14, wherein the sheet transport unit is rotatably installed on the main frame.

17. The electrophotographic printer of claim 15, wherein the transfer roller is installed in the sheet transport unit.

18. The electrophotographic printer of claim 1, further comprising:
a waste toner storage container to store waste toner generated at the photosensitive

drum and the transfer belt, and installed so as to be mounted on or dismounted from the main frame in a lengthwise direction of the photosensitive drum.

19. An electrophotographic printer comprising:
a main frame;
a photosensitive drum unit having a photosensitive drum on which an electrostatic latent image is formed; and
a plurality of development units each having a developing roller to form a toner image by supplying toner to the electrostatic latent image,
wherein the photosensitive drum unit is mounted on or dismounted from the main frame in a vertical direction, and the plurality of development units are mounted on or dismounted from the main frame in a direction perpendicular to the direction in which the photosensitive drum unit is mounted or dismounted.

20. The electrophotographic printer of claim 19, wherein the plurality of development units are mounted or dismounted in a horizontal direction.

21. The electrophotographic printer of claim 19, wherein the plurality of development units are mounted or dismounted in a lengthwise direction of the photosensitive drum.

22. An electrophotographic printer comprising:
a main frame;
a photosensitive drum unit having a photosensitive drum on which an electrostatic latent image is formed, and slidably mounted on or dismounted from the main frame in a first direction;
a development unit having a developing roller to supply toner to the photosensitive drum to develop the electrostatic latent to form a toner image, and slidably mounted on or dismounted from the main frame in a second direction different from the first direction; and
an intermediate transfer unit having a transfer medium to which the toner image is transferred from the photosensitive drum, and installed adjacent to the photosensitive drum unit on the main frame.

23. The electrophotographic printer of claim 22, wherein the first direction and the second direction are perpendicular to each other with respect to rotation axes of the photosensitive drum and the developing roller, respectively.

24. The electronphotographic printer of claim 22, wherein the intermediate transfer unit is slidably mounted on or dismounted from the main frame in the first direction.